

REMARKS

In the Office Action, the Examiner rejected claims 31-32 pursuant to 35 U.S.C. § 102(b) as being anticipated by Yamaguchi et al. (U.S. Patent No. 4,631,710) or Roundhill et al. (U.S. Patent No. 6,283,919). Claims 1, 3-13, 20-22 and 25 were allowed. Applicants respectfully request reconsideration of the rejections of claims 31-32, including independent claim 31.

Independent claim 31 recites axially processing ultrasound data and adapting a data process as a function of the axial processing to reduce grating lobe energy in the data. Yamaguchi et al. and Roundhill et al. do not disclose these limitations.

Yamaguchi et al. disclose azimuth adaptive phased array sonar (title; and abstract). The center frequency used for scan lines is set based on angle (Col. 2, lines 16-30). For different angles, different set center frequencies are applied by a variable band pass filter (Col. 2, lines 54-68; and Col. 3, lines 27-33). Scan line based variation is an azimuth or lateral process, not an axial process. Yamaguchi et al. also vary the band pass filter axially or as a function of depth to lower the frequency for greater depths (Col. 4, lines 35-39). The axial process varies as a function of depth. Yamaguchi et al. do not disclose adapting a data process as a function of the axial processing.

Roundhill et al. note that harmonic beams have reduced side lobes (Col. 1, lines 49-53 and Col. 5, line 22 – Col. 6, line 54). Since harmonic information may be unavailable at some depths, a scan line of data is formed from a blended combination of harmonic and fundamental information as a function of depth (Col. 2, lines 17-24 and Col. 11, lines 23-25). The blending is pre-programmed or directed by the user (Col. 11, lines 45-52). The blend may be performed by a depth-dependent, time varying filter (Col. 12, lines 4-18). Roundhill et al. uses a pre-programmed or user directed axial process (blending), but do not disclose adapting a data process as a function of the axial processing.

Dependent claim 32 depends from the independent claim 31 is allowable for the same reasons as the independent claim.

CONCLUSION:

Applicants respectfully submit that all of the pending claims are in condition for allowance and seeks early allowance thereof. If for any reason, the Examiner is unable to allow the application but believes that an interview would be helpful to resolve any issues, he is respectfully requested to call the undersigned at (650) 943-7554 or Craig Summerfield at (312) 321-4726.

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Respectfully submitted,



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